Amendment to the Claims

What is claimed is:

1. (Currently Amended) A laser device for generating a laser beam by supplying a pumping light to a laser medium contained in an optical fiber comprising:

an optical fiber having a core portion in which said laser medium is added and a cladding portion covering said core portion,

a fluid medium having a refractive index substantially identical to said cladding portion at a wavelength of said pumping light,

a pumping light reflecting portion having an interior reflective surface defining an inner space filled with said fluid medium, the inner space being substantially surrounded by said reflective surface, and the inner space containing at least a part of said optical fiber thereby to confine said pumping light interiorly thereof, and

a pumping light introducing port for introducing said pumping light into said pumping light reflecting portion,

wherein the pumping light enters said core portion through said cladding portion, and

wherein said pumping light reflecting portion comprises a part of a passage for said fluid medium.

2. (Original) A laser device according to claim 1, wherein said fluid medium circulates through said pumping light reflecting portion.

3. (Original) A laser device according to claim 1, wherein said fluid medium is a coolant for cooling said optical fiber and said pumping light introducing port.

4. (Original) A laser device according to claim 1, wherein said optical fiber comprises a material selected from the group consisting of silica glass, fluoride glass, fluorophosphate glass, chalcogenide glass, oxychalcogenide glass, phosphate glass, telluride glass, borate glass, multicompound aluminosilicate glass and plastic.

5. (Original) A laser device according to claim 1, wherein said laser medium is selected from the group consisting of Nd^{3+}, Yb^{3+}, Er^{3+}, Pr^{3+}, Cd^{3+}, TM^{3+}, Ho^{3+}, Ho^{3+}, Ho^{3+}, Tb^{3+}, Dy^{3+}, Eu^{3+}, Eu^{2+} and organic dye.

6. (Currently Amended) An optical signal amplifier for amplifying an optical signal by supplying a pumping light to a laser medium contained in an optical fiber comprising:

an optical fiber having a core portion in which said laser medium is doped and a cladding portion covering said core portion,

a fluid medium having a refractive index substantially identical to said cladding portion at a wavelength of said pumping light,

a pumping light reflecting portion having an interior reflective surface defining an inner space filled with said fluid medium, the inner space being substantially surrounded by said reflective surface, and the inner space containing at least a part of said optical fiber thereby to confine said pumping light interiorly thereof, and

a laser beam introducing port for introducing said pumping light into said pumping light reflecting portion,

wherein the pumping light enters said core portion through said cladding portion, and

wherein said pumping light reflecting portion comprises apart of a passage for said fluid medium.

7. (Currently Amended) A laser device for generating a laser beam by supplying a pumping light to an optical fiber, said optical fiber having a core in which a laser medium is doped and a cladding covering said core, said laser device comprising:

an optical fiber bundle in which at least two discontinuous segments of an [[said]] optical fiber forming at least one optical path are [[is]] bundled,

a pumping light introducing portion for introducing pumping light for pumping said laser medium in said optical fiber, said pumping light introducing portion being bundled together with said optical fiber in said optical fiber bundle,

a pumping light reflection portion having an interior reflective surface defining an inner space filled with said fluid medium, the inner space covering at least a part of a side surface of said optical fiber bundle for repeatedly reflecting the pumping light so that said pumping light is absorbed in said laser medium, and

a laser output portion for outputting a laser beam generated by said laser medium pumped by said pumping light.

8. (Original) A laser device according to claim 7, wherein a space inside said pumping light reflection portion is filled with a medium having a refractive index substantially the same as a refractive index of said cladding of said optical fiber.

9. (Original) A laser device according to claim 7, wherein a space inside said optical fiber bundle is filled with a cooling medium to cool said optical fiber bundle.

10. (Original) A laser device according to claim 7, wherein said optical fiber comprises a material selected from the group consisting of silica glass, fluoride glass, fluorophosphate glass, chalcogenide glass, oxychalcogenide glass, phosphate glass, telluride glass, borate glass, multicompound aluminosilicate glass and plastic.

11. (Original) A laser device according to claim 7, wherein said laser medium is selected from the group consisting of Nd^{3+}, Yb^{3+}, Er^{3+}, Pr^{3+}, Ce^{3+}, Tm^{3+}, Ho^{3+}, Tb^{3+}, Tb^{3+}, Dy^{3+}, Eu^{3+}, Eu^{2+} and organic dye.

12. (Currently Amended) An optical signal amplifier for amplifying an optical signal by using an optical fiber, said optical fiber having a core in which a laser medium is doped and a cladding covering said core, said optical signal amplifier comprising:

an optical fiber bundle in which at least two discontinuous segments of an [[said]] optical fiber forming at least one optical path are [[is]] bundled,

a pumping light introducing portion for introducing pumping light for pumping said laser medium in said optical fiber bundle, said pumping light introducing portion being bundled together with said optical fiber bundle,

a pumping light reflection portion having an interior reflective surface defining an inner space filled with said fluid medium, the inner space covering at least a part of a side surface of said optical fiber bundle for repeatedly reflecting the pumping light so that said pumping light is absorbed in said laser medium, and

an output portion for outputting an optical signal amplified by said laser medium pumped by the pumping light.

13. (New) A laser device according to claim 6, wherein said fluid medium circulates through said pumping light reflecting portion.

14. (New) A laser device according to claim 6, wherein said fluid medium is a coolant for cooling said optical fiber and said pumping light introducing port.

15. (New) A laser device according to claim 6, wherein said optical fiber comprises a material selected from the group consisting of silica glass, fluoride glass, fluorophosphate glass, chalcogenide glass, oxychalcogenide glass, phosphate glass, telluride glass, borate glass, multicompound aluminosilicate glass and plastic.

16. (New) A laser device according to claim 6, wherein said laser medium is selected from the group consisting of Nd^{3+}, Yb^{3+}, Er^{3+}, Pr^{3+}, Cd^{3+}, TM^{3+}, Ho^{3+}, Ho^{3+}, Ho^{3+}, Tb^{3+}, Dy^{3+}, Eu^{3+}, Eu^{2+} and organic dye.

17. (New) A laser device according to claim 12, wherein a space inside said pumping light reflection portion is filled with a medium having a refractive index substantially the same as a refractive index of said cladding of said optical fiber.

18. (New) A laser device according to claim 12, wherein a space inside said optical fiber bundle is filled with a cooling medium to cool said optical fiber bundle.

19. (New) A laser device according to claim 12, wherein said optical fiber comprises a material selected from the group consisting of silica glass, fluoride glass, fluorophosphate glass, chalcogenide glass, oxychalcogenide glass, phosphate glass, telluride glass, borate glass, multicompound aluminosilicate glass and plastic.

20. (New) A laser device according to claim 12, wherein said laser medium is selected from the group consisting of Nd^{3+}, Yb^{3+}, Er^{3+}, Pr^{3+}, Ce^{3+}, Tm^{3+}, Ho^{3+}, Tb^{3+}, Tb^{3+}, Dy^{3+}, Eu^{3+}, Eu^{2+} and organic dye.